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terminating proximate to said muzzle end, said vents having a size less than ½ inch in diameter, said vents being constructed and arranged to minimize sound report by gradual release of gasses through said vents along said barrel toward said muzzle end of said firearm following discharge, said vents minimizing gas pressure proximate to said muzzle end.

Please cancel claim 11 without prejudice. Claims 4, 7, 10, 13, 16, and 18 have been withdrawn in response to the previously issued restriction requirement.

REMARKS

Applicant is providing a response to the Office Action of September 30, 2002 by numbering paragraphs herein to correspond to the Office Action.

In paragraph 2, the Examiner has rejected claim 11 pursuant to 37 CFR 1.75(c). Applicant has cancelled claim 11 herein without prejudice. Applicant believes that the amendment herein resolves the cited claim.

In paragraph 4, the Examiner next rejected claims 1-3, 5, 6, 8, 9, 12, 14, 15, and 17 pursuant to 35 U.S.C. §103(a) over Sweetman U.S. Patent No. 2,742,821 and Smith (Small Arms & Cannons 1982).

With respect to 35 U.S.C. §103, the Federal Circuit has set out at least five principles regarding obviousness determinations under §103. *Hodosh v. Block Drug Co.*, 786 F.2d 1136, 229 USPQ 182, 187 (Fed. Cir. 1986). In *Hodosh*, the Federal Circuit stated:

Our comments on the district court's obviousness determination generally include the following tenets of patent law that must be adhered to when applying §103:

- (1) the claimed invention must be considered as a whole (35 U.S.C. 103; see, e.g., *Jones v. Hardy*, 727 F.2d 1524, 1529, 220 USPQ 1021, 1024 (Fed. Cir. 1984) (though the difference between claimed invention and prior art may seem slight, it may also have been the key to advancement of the art));

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(2) the references must be considered as a whole and suggest the desirability and thus the obviousness of making the combination (see, e.g., *Lindemann Maschinenfabrik GmbH v. American Hoist and Derrick Co.*, 730 F.2d 1452, 1462, 221 USPQ 481 488 (Fed. Cir. 1984));

(3) the references must be viewed without the benefit of hindsight vision afforded by the claimed invention (e.g., *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 1553, 220 USPQ 303, 313 (Fed. Cir. 1983));

(4) "ought to be tried" is not the standard with which obviousness is determined (*Jones, supra*, 727 F.2d at 1530, 220 USPQ at 1026); and

(5) the presumption of validity remains constant and intact throughout litigation (35 U.S.C. 285; e.g., *American Hoist & Derrick Co. v. Sowa & Sons, Inc.*, 725 F.2d 1350, 1359-60, 220 USPQ 763, 770 (Fed. Cir. 1984)).

Furthermore, when an attempt is made to combine two references A and B, or to change a single reference, a prima facie case of obviousness has not been established if:

(1) A and B could not or would not be physically combined in an operative fashion to produce the desired result by a person of ordinary skill without use of the patentee's teachings. *In re Lintner*, 458 F.2d 1013, 173 USPQ 560, 562 (CCPA 1972); *In re Regel*, 526 F.2d 1399, 199 USPQ 136 (CCPA 1975); *In re Jansson*, 609 F.2d 996, 203 USPQ 976 (CCPA 1979).

(2) The intended purpose or function of either A or B, or both, is destroyed by their combination. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984).

(3) No suggestion why or reasons or motivation for combining A and B appears explicitly or implicitly in either A or B, or both in combination. *In re Clinton*, 527 F.2d 1226, 188 USPQ 265 (CCPA 1976). Obviousness can not be established by combining the teachings of the prior art to produce the claimed invention, absent a teaching or suggestion supporting the combination. *In re Fine*, 5 USPQ 2d, 1596 (1988) (Fed. Cir. 1989); see also *In re Laskowski*, 10 USPQ 2d 1397 (Fed. Cir. 1989).

(4) A and B are from such diverse arts (i.e., either or both are nonanalogous art to the claimed invention) that a person of ordinary skill in the claimed art would not look to those arts to solve the problem treated by the claimed invention. *In re Pagliaro*, 657 F.2d 1219, 210 USPQ 888 (CCPA 1981); *In re Wood*, 599 F.2d 1032, 202 USPQ 171 (CCPA 1979); *In re Horn*, 203 USPQ 969 (CCPA 1979).

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(5) A and B do not teach the source of the problem and the recognition of the source of the problem is what is unobvious. *Eibel Process Co. v. Minnesota and Ontario Paper Co.*, 261 US 45 (1923); *In re Sponnoble*, 405 F.2d 578, 160 USPQ 237 (CCPA 1969); *In re Peehs*, 612 F.2d 1287, 204 USPQ 835 (CCPA 1980). See *Kayton*, 1 Patent Practice 5-28, 29 (1985).

In addition, in the recent case of *In re Dembiczaik*, 50 U.S.P.Q.2d 1614 (CAFC 1999), the Court of Appeals for the Federal Circuit has stated that the ultimate determination of whether an invention is or is not obvious is a legal conclusion based upon underlying factual inquiries including:

- (1) The scope and content of the prior art;
- (2) The level of ordinary skill in the prior art;
- (3) The differences between the claimed invention and the prior art; and
- (4) Objective evidence of non-obviousness.

The Court of Appeals for the Federal Circuit went on to state that the analysis with respect to obviousness is required to be conducted "at the time the invention was made" to guard against entry into the "tempting but forbidden zone of hindsight". The Court of Appeals for the Federal Circuit went on to state that the "very ease with which the invention can be understood may prompt one to fall victim to the insidious effect of a hindsight syndrome wherein that which only the inventor taught is used against its teacher". The Court of Appeals for the Federal Circuit has stated that the case law makes clear that the best defense against the subtle but powerful attraction of a hindsight-based obviousness analysis is the rigorous application of the requirement for a showing of the teaching or motivation to combine prior art references and that one of ordinary skill in the art would have been motivated to select the references and combine them, and it was error to not elucidate any factual teachings, suggestions, or incentives from the prior that showed the propriety of combination. The Federal Circuit in *Dembiczaik* further stated that combining prior art references without evidence of such a suggestion, teaching, or motivation simply takes the inventor's disclosure as a blueprint for piecing together the prior art to defeat patentability which is the essence of hindsight.

The Sweetman '821 reference identifies and/or teaches the problem to be

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solved, namely the disadvantage of the shell case becoming mutilated during discharge of a weapon which includes a tapered bore. Sweetman 821 in column 1, beginning at line 40, states: "This mutilation of the case is caused by the formation of a pressure wave in the bore created when the deformable projectile enters the tapered section, producing momentary decrease in velocity thereof.... Since the pressure front is moving toward the muzzle, this momentary deceleration creates a back pressure wave toward the breech which mutilates the case end." The Sweetman '821 reference teaches the solution to this problem in column 2, beginning at line 70 and extending into column 3, which states: "From the foregoing, it will be apparent that when a projectile, not shown, of a caliber corresponding to the caliber of the larger bore section of the barrel is fired through any one of the barrels as shown in Figs. 1, 3, 4, and 5, will, when it passes from the larger bore section, adjacent the breech end of the barrel, and into the tapered section where it is deformed, create a back pressure wave which will be released through the vents located either at the rear end of the tapered section or at the forward end of the rear, straight section. This will prevent the back pressure wave from moving back to the breech of the barrel, not shown, and mutilating the open end of the empty shell case, not shown." The Sweetman '821 reference teaches the use of shock wave ports utilizing relatively large holes proximate to a breech which during operation will add to the noise of the report. The Sweetman '821 reference teaches the sudden release of the highest gas pressure proximate to the breech which will create a shock wave which will, in turn, increase the noise of the report.

The Sweetman '821 reference does not teach or suggest the gradual release of gasses through the porting along the length of an elongate barrel to minimize gas pressure proximate to the muzzle end, thereby reducing the shock wave and noise of the report. The Sweetman '821 reference does not teach this problem nor does the Sweetman '821 reference teach or suggest a solution to the problem associated with minimization of sound report by the minimization of gas pressure proximate to the muzzle end of a firearm. The Sweetman '821 reference does not teach or suggest the release of gasses through the ports of an elongate barrel with port sizes being sufficiently small to prevent the creation of a shock wave at the ports for minimization of sound report.

The Smith reference teaches that the longer the barrel the greater the

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velocity of the projectile. The Smith reference is designed to solve the problem of maximization of muzzle velocity. In addition, the Smith reference teaches the use of silencers which require inner and outer sections and baffles which are restricted by the Department of Alcohol, Tobacco, and Firearms. In both the Sweetman '821 and the Smith reference, muzzle velocity is identified as an important, if not critical, aspect of the firearm. The gradual release of gasses through vents along the barrel to minimize gas pressure proximate to the muzzle end destroys the desired and important goal of maximization of muzzle velocities as required by the Sweetman '821 and Smith references.

The Sweetman '821 reference does not teach or suggest any combination for use with a silencer as taught by the Smith reference. Nowhere within the Sweetman '821 reference are silencers taught, suggested, and/or referenced.

No suggestion, motivation, or teaching is provided in the Sweetman '821 reference for combination with the Smith references cited by the Examiner. No suggestion, motivation, or teaching is provided in the Sweetman '821 reference for combination with any other reference to provide for the features of Applicant's claims as amended herein.

No suggestion, motivation, or teaching is provided in the Smith reference for combination with the Sweetman '821 reference. No motivation is provided within either the Sweetman '821 nor the Smith references to address the same problem to be solved as identified and taught by Applicant herein.

Applicant respectfully asserts that the Sweetman '821 and Smith references may not be combined in an operative fashion to yield Applicant's invention herein. Applicant respectfully asserts that the purpose of the Sweetman '821 reference and the Smith reference related to teaching of maximization of muzzle velocity would be destroyed when combined to attempt to provide Applicant's invention herein. Applicant further asserts that no motivation is present within either the Sweetman '821 nor Smith references to address the problem and solution as identified and solved by Applicant herein. Further, Applicant respectfully asserts that the Examiner has impermissibly utilized hindsight to reject Applicant's claims as amended herein. Applicant further asserts that the examination of Applicant's claims as amended herein are allowable when

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examined without the impermissible use of hindsight in view of the Sweetman '821 and/or Smith references.

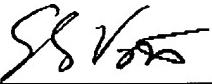
Applicant has attached hereto a "Marked-Up Copy of the Amended Claims" for consideration by the Examiner. The claims have been amended herein and/or canceled without prejudice.

For the above-identified reasons Applicant respectfully requests reconsideration and withdrawal of a 35 U.S.C. §103 rejection of Applicant's claims as amended herein. Applicant respectfully requests reconsideration and allowance of Applicant's claims 1, 2, 3, 5, 6, 8, 9, 11, 12, 14, 15, and 17 herein. Issuance of an early Notice of Allowance is earnestly solicited. Should the Examiner have any questions concerning this Amendment and remarks, the Examiner is cordially invited to contact the undersigned via E-mail, facsimile, and/or by telephone at the below-identified addresses.

Please charge any deficiency of fees to Applicant's Counsel's Deposit Account Number 22-0350.

Respectfully submitted,
VIDAS, ARRETT & STEINKRAUS, P.A.

Date: 1-29-03

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VERSION WITH MARKINGS TO SHOW CHANGES TO THE CLAIMS

1. (Amended) A firearm comprising:

- a) an elongate barrel having a length of at least three feet, said elongate barrel having a breach end and a muzzle end; and
- b) a plurality of vents disposed through said elongate barrel, said vents initiating beyond twelve inches from said breach end, said vents terminating proximate to said muzzle end, said vents having a size less than $\frac{1}{2}$ inch in diameter, said vents being constructed and arranged to minimize sound report by gradual release of gasses through said vents along said barrel toward said muzzle end of said firearm following discharge, said vents minimizing gas pressure proximate to said muzzle end.